

**US DOT PHMSA Technical Assistance Grant # DTPH56-15-GPPT04**

**Final Report:**

**The City of Allentown, PA**

**December 30, 2016**

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Introduction:

The City of Allentown (CITY) was awarded technical assistance funding to leverage the investments, work products and partnerships of the Mayors' Council on Pipeline Safety (MCPS) in order to engage consultants, industry, local officials, government and non government entities in collaborative research to:

- 1) gather subjective input for use in compiling white papers for use in advancing each of MCPS's five core initiatives:
  - i. Leak Detection
  - ii. Defining prescriptive distribution line safety regulations
  - iii. Development of a model Urban Pipeline Initiative of utilities and cities sharing pipeline mapping information
  - iv. Prescriptive response best practices specific to urban communities
  - v. Use of automatic shut off valves

The Mayors' Council on Pipeline Safety (MCPS) is a bi costal entity with national outreach to a broad scope of stakeholders. By nature, work conducted by MCPS focuses on the full spectrum of our nation's populous cities, where pipeline failures pose a significant risk to people as defined in 49 CFR 195.6. Outreach and identification of research partners was based on the 2014-2015 Allentown Technical Assistance Grant #DTPH56-14-GPPT06. Work product of #DTPH56-14-GPPT06 included a MCPS Inaugural Conference which provided input from a diverse population of citizens, federal and state entities, NGOs<sup>1</sup>, legislators, and union affiliates

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<sup>1</sup> Non Government Organizations

made available to subcontractors for evaluation, as well as the formal report from Accufacts, Inc. which supplied initial recommendations in the scope of five MCPS of initiatives.

Secondly, the project was funded to identify key cities for participation in a case study of city officials' knowledge base in these five MCPS initiatives. The case study was conducted in order to:

- 1) Produce subjective needs assessments benchmarks based on pre and post study data to:
  - i. identify risk management education and training needs specific to gas pipeline and infrastructure safety specific to local government officials (to include increasing awareness of "811 – Call Before You Dig" program).
  - ii. implement data to educate city officials
  - iii. implement data to encourage and obtain proactive membership in MCPS and MCPS initiative outcomes.
  - iv. Develop and implement a strategic social media plan & campaign to include content development of the above statements of work beyond key cities.

The CITY committed to, and has, maintained records for transferability of project achievements and data, remained within grant budget and respectfully submits this final final report.

On behalf of the City of Allentown,

A handwritten signature in dark ink, appearing to be 'Lynda Farrell', written in a cursive style.

Lynda Farrell, Executive Director, Mayors' Council on Pipeline Safety

### Program Output Report:

The final report shall serve to demonstrate the CITY has met the established statements of work by actual accomplishments in expected program outputs. The CITY remained in compliance with the proposed and funded budget. In accordance with the budget narrative, the CITY addressed the statement of work by securing services of Lynda Farrell, Executive Director of Pipeline Safety Coalition (PSC) herein “Project Manager”) for PSC’s expertise in the proposed statements of work; experience and history in the formation and continuing efforts of the MCPS; leveraging of relationships developed by PSC and MCPS; to conduct subcontractor searches through requests for proposals (RFPs); manage and ensure subcontractor work product compliance for contracted services; manage invoices and directly reimburse subcontractors for services; maintain records for transferability; produce a final report. On behalf of the CITY, the Project Manager broadcast RFPs and secured subcontracting services of the following:

- 1) Dr. Simona Perry, an environmental scientist and an applied anthropologist who has extensive experience working with diverse stakeholders and communities across the northeastern and mid-Atlantic United States on a variety of issues in a diversity of settings, both urban and rural. Her company, c.a.s.e. Consulting Services LLC is dedicated to developing innovative and effective community awareness and empowerment processes and tools that are culturally relevant, locally governed, and that provide just solutions to complex economic development projects and environmental change and conflict scenarios. Dr. Perry was contracted to identify key cities to participate in a case study of city officials’ knowledge base in the five areas of MCPS initiatives, to conduct the case study and produce subjective needs assessments benchmarks based on pre and post study data, identify risk management education and training needs specific to gas pipeline and infrastructure safety specific to local government officials to include increasing awareness of “811 – Call Before You Dig” program, implement data to educate city officials and encourage and obtain proactive membership in MCPS and MCPS initiative outcomes and to develop and implement a strategic social media plan & campaign in collaboration with web designer. (See: Key City Report: Attachment A)
- 2) BlueGreen Alliance Foundation (BGAF), unites America’s largest labor unions and its most influential environmental organizations to solve today’s environmental challenges in ways that create and maintain quality jobs and build a stronger, fairer economy (Visit BGA [here](#) for more information about the Foundation). BGA has worked with US DOT PHMSA on other TAG programs, was uniquely qualified for this project and was contracted to gather subjective input for use in compiling white papers for use in advancing each of MCPS’s five core initiatives.<sup>2</sup> MCPS utilized BGA input in creating MCPS White Papers for each of the five MCPS Initiatives. (See: MCPS Initiatives White Papers: Attachment B)

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<sup>2</sup> MCPS Core Initiatives: 1) Leak Detection, 2) Defining prescriptive distribution line safety regulations, 3) Development of a model Urban Pipeline Initiative of utilities and cities sharing pipeline mapping information 4) Prescriptive response best practices specific to urban communities, 5) Use of automatic shut off valves

- 3) Digital Feast, Inc. a Lehigh Valley, Pennsylvania based creative marketing agency brings increased visibility and profitability to the clients they serve. Digital Feast developed and maintains the current MCPS website and designed the campaign “2015 Inaugural MCPS Conference” platform. Digital was contracted to develop and implement a strategic social media plan and campaign which includes collaboration of content development of Dr. Perry’s work product in a case study of city officials’ knowledge base in the five areas of MCPS

While issues of the contribution of methane to climate change was not a focus of this project, it was a focus of experts we interviewed in process of this project. See White Papers for details and we reference research by MCPS Inaugural Conference presenter, Nathan Phillips of Boston University<sup>3 4</sup>, research by MCPS Inaugural Conference presenter, Leslie Fleischman, Clean Air Council<sup>5</sup> and the attached Abstract: Estimate of methane emissions from the US Natural Gas Industry<sup>6</sup>:

TABLE 3. SUMMARY OF METHANE EMISSIONS

Segment	Emissions, Bscf (10 <sup>9</sup> m <sup>3</sup> )	Percent of Total Emissions (%)	Emissions as a Percent of Gross National Production (1992) <sup>a</sup>
Production	84.4 ± 37.0 <sup>b</sup> (2.39 ± 1.05)	26.8 ± 11.8	0.38 ± 0.17
Processing	36.4 ± 20.6 (1.03 ± 0.58)	11.6 ± 6.6	0.16 ± 0.09
Transmission/Storage	116.5 ± 58.0 (3.30 ± 1.64)	37.1 ± 18.5	0.53 ± 0.26
Distribution	77.0 ± 53.6 (2.18 ± 1.52)	24.5 ± 17.1	0.35 ± 0.24
<b>Total</b>	<b>314 ± 105<sup>c</sup></b> <b>(8.89 ± 2.97)</b>	<b>100.0 ± 33.4</b>	<b>1.42 ± 0.47</b>

<sup>a</sup> 1992 Gross national production = 22,132 Bscf (626.8 x 10<sup>9</sup> m<sup>3</sup>). [49]

<sup>b</sup> Precision is based on a 90% confidence interval, assuming a normal distribution.

<sup>c</sup> Total precision is based on a 90% confidence interval, with more conservative assumptions (see text).

TABLE 4. METHANE EMISSIONS BY INDUSTRY SEGMENT AND TYPE

Emission Type	Production Segment, Bscf (10 <sup>9</sup> m <sup>3</sup> )	Gas Processing Segment, Bscf (10 <sup>9</sup> m <sup>3</sup> )	Transmission and Storage Segment, Bscf (10 <sup>9</sup> m <sup>3</sup> )	Distribution Segment, Bscf (10 <sup>9</sup> m <sup>3</sup> )	Industry Emissions, Bscf (10 <sup>9</sup> m <sup>3</sup> )	Emissions as Percent of Total
Fugitive	24.0 ± 10.0 <sup>b</sup> (0.68 ± 0.28)	24.4 ± 16.7 (0.69 ± 0.47)	72.1 ± 47.0 (2.04 ± 1.33)	74.7 ± 35.8 (2.12 ± 1.01)	195.2 ± 62.3 (5.53 ± 1.76)	62.1
Vented	53.8 ± 33.1 (1.52 ± 0.94)	5.1 ± 8.1 (0.14 ± 0.23)	33.0 ± 33.9 (0.93 ± 0.96)	2.2 ± 40.0 (0.06 ± 1.13)	94.2 ± 62.4 (2.67 ± 1.77)	30.0
Combusted	6.6 ± 13.2 (0.19 ± 0.37)	6.9 ± 8.9 (0.20 ± 0.25)	11.4 ± 1.8 (0.32 ± 0.05)	N/A	24.9 ± 16.0 (0.71 ± 0.45)	7.9
<b>Total<sup>a</sup></b>	<b>84.4 ± 37.0</b> <b>(2.39 ± 1.05)</b>	<b>36.4 ± 20.6</b> <b>(1.03 ± 0.58)</b>	<b>116.5 ± 58.0</b> <b>(3.30 ± 1.64)</b>	<b>77.0 ± 53.6</b> <b>(2.18 ± 1.52)</b>	<b>314 ± 105<sup>c</sup></b> <b>(8.89 ± 2.97)</b>	<b>100</b>

<sup>a</sup> Individual categories may not sum exactly to totals shown due to the roundoff of significant figures.

<sup>b</sup> Precision is based on a 90% confidence interval, assuming a normal distribution.

<sup>c</sup> Total precision is based on the upper limit of a 90% confidence interval, with more conservative assumptions (see text).

<sup>3</sup> [https://www.bu.edu/energy/files/2011/05/Abstract-Urban-Measurements-of-Methane\\_v22.pdf](https://www.bu.edu/energy/files/2011/05/Abstract-Urban-Measurements-of-Methane_v22.pdf)

<sup>4</sup> <http://mayorscouncilpipelinesafety.com/conference-highlights/leak-detection/>

<sup>5</sup> <http://mayorscouncilpipelinesafety.com/conference-highlights/leak-detection/>

<sup>6</sup> David A. Kirchgessner<sup>1\*</sup>, Robert A. Lott<sup>2\*</sup>, R. Michael Cowgill<sup>3</sup>, Matthew R. Harrison<sup>3</sup>, Theresa M. Shires<sup>3</sup> 1U.S. Environmental Protection Agency Air Pollution Prevention and Control Division, Research Triangle Park, North Carolina 27711 2Gas Research Institute, 8600 Bryn Mawr Ave., Chicago, Illinois 60631, 3Radian Corporation, 8501 N. Mopac Blvd., Austin, Texas 78720-1088

Additionally, the United Nation's Intergovernmental Panel on Climate Change, in a 20 year span, methane is 86 times more potent than carbon dioxide, making even a small methane leak into the atmosphere incredibly significant. Project research made clear the need for climate impacts in a fully definitive range of safety. Currently lacking are leak implications to human/community health, environmental safety and/or impacts of methane leaks contribution to climate change.

The CITY committed to, and has, maintained records for transferability of project achievements and data, remained within grant budget and respectfully submits this final final report.

#### Summary Program Outputs:

The MCPS founders hale from Allentown, PA and San Bruno, California - two cities that have experienced the results of the most horrific pipeline explosions in our nation's recent history. These explosions were not attributable to outside forces, and in fact, they were due to operator failure to address risk management. MCPS notes that utilities heretofore involved only in distribution infrastructure and intrastate lines are joining in the development of interstate pipeline infrastructure. While an opportunity for economic growth for utilities, this study has documented a continued business as usual approach to aging distribution lines and rhetoric of national security as a guise for unwillingness to share mapping of pipelines with cities. (See Study: Attachment B). MCPS has long stated that at a time when widespread pipeline build-out competes in priority with replacing aging gas pipeline infrastructure, we seek to fill the need for "someone" to proactively put public safety as their first priority. While MCPS strives to facilitate safety initiatives that prevent tragedies, this project has shown a spotlight on one fact: Mayors/City Officials overwhelmingly lack comprehension of the grave results a City will suffer without their proactive participation in pipeline safety; in fact willingness to learn and proactively participate in this aspect of their city's safety culture was evidenced in the difficulty this project had in obtaining participation. (See Study: Attachment B)

While MCPS continues to assert that it is all the more essential for cities to be educated and informed and be key stakeholders in risk management on the local level; reticence is pervasive. This study indicates the community who depends on public servants, such as mayors, to provide risk management in many forms, is largely unaware of the lack of involvement of local officials

in risk management. And when “something bad happens,” City officials rally until the damages are no longer raw and in plain site; complacency then sets in. MCPS has found that outreach to cities devastated by pipeline explosions such as: New York, Kansas City, Tuscaloosa, North Little Rock, San Francisco, Newton, Edison, Salt Lake City, Philadelphia, Mobile, Topeka, Baton Rouge, Fort Worth, Mayflower, Austin, Indianapolis, Redmond, Irving, Ewing - to name just a few of who have had citizens suffer from pipeline tragedy, yet are unresponsive to MCPS outreach.

The study, and experience, has shown that until an event occurs, communities and community officials remain generally unaware of pipeline safety protocols. In our work with the San Bruno Technical Assistance Grant to form a National Pipeline Survivors’ Network, MCPS’s consultant interviewed community officials in Silver Spring, MD after a low income apartment building exploded, killing 7 and displacing dozens. The overriding astonishment on the part of community officials was the lack of preparedness; not just for the fires themselves, but for the show and long term consequences.

During the course of the project, MCPS recognized a need to further support the *Call Before You Dig* program, specifically in Pennsylvania where outreach was made to our partner Pipeline Safety Coalition by *One Call* during a state debate<sup>7</sup> on whether to invest state funds in the continuation of *One Call*. The program has been funded, for the short term. MCPS will be investing more website presence in support of *One Call* and has arranged to collaborate with Bill Kiger of *One Call*.

### **Recommendations:**

- 1) Crucial to reducing community risk associated with gas pipelines is continued efforts in educating and gaining support of diverse stakeholders in the five MCPS Initiatives so that white paper concepts become prescriptive practice.
- 3) Call Before You Dig” program: MCPS should aide in outreach to other organizations to invest more free space to One Call.
- 4) There are so many pulls at Mayors’ coattails. A supportive effort with PHMSA to organize a national meeting or conference may be necessary to bring the importance of a robust MCPS to educate and unite Mayors in proactive pipeline safety. Through a Technical Assistance Grant obtained by San Bruno, MCPS and partner Pipeline Safety Coalition are forming a National Pipeline Survivors’ Network, an effort which has been granted a one year no cost extension. Coupling this initiative in a Mayors’ Summit with PHMSA and perhaps other Support Network

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<sup>7</sup> Reauthorization of the Underground Utility Line Protection Law (Act 287 of 1974) SB 1235

Team members (NTSB<sup>8</sup>, MADD<sup>9</sup>, UA<sup>10</sup>) would provide the foundation for a robust and productive Summit.

A National Mayors' Summit would directly address PHMSA's Strategic Plan, §7.02: Challenges and Strategies, by leveraging the resources and relationships developed by MCPS to, at minimum:

- 1) Promote shared responsibility and collaboration with others
- 2) Promote strong safety culture and safety management systems
- 3) Better understanding and targeting risks
- 4) Strengthening standards
- 5) Expanding public education/awareness

Safety through education and collaborative partnerships has been the foundation of MCPS and will continue to be so. MCPS is in alignment with Article VII: PHMSA's Strategic Plan, Section 7.01 "...to protect people and the environment from the risks of hazardous materials transportation by pipeline and other modes of transportation...(and to) establish national policy, implement and enforce standards, educate, and conduct research to prevent incidents..."

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<sup>8</sup> National Transportation Safety Board

<sup>9</sup> Mothers Against Drunk Driving

<sup>10</sup> United Association of Plumbers and Pipefitters of the US, Canada and Australia